**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claims 1-15 (canceled).

16. (New) A simulation system for computer-implemented simulation and verification of a control system under development, comprising:

a simulation host;

a simulation target operatively connected to the simulation host, wherein an operating system of the simulation target representing at least a part of the control system is reconfigured by the simulation host via a first application programming interface associated with the operating system of the simulation target.

17. (New) A simulation system according to claim 16, wherein the operating system is a real-time operating system.

18. (New) A simulation system according to claim 17, wherein the operating system is reconfigured after downloading an executable software onto the target, whereby a real-time behavior of a software of the simulation target is one of defined and altered.

19. (New) A simulation system according to claim 16, wherein the first application programming interface associated with the operating system is a part of the operating system.

20. (New) A simulation system according to claim 16, further comprising:

a second application programming interface associated with the operating system, wherein the second application programming interface associated with the operating system is a part of the operating system;

wherein the first application programming interface associated with the operating system is not part of the operating system.

21. (New) A simulation system according to claim 16, wherein the simulation host includes at least one modeling tool, and wherein a software of the control system is executed on the simulation target.

22. (New) A simulation system according to claim 21, further comprising:

a target server for connecting the at least one modeling tool with the simulation target.

23. (New) A simulation system according to claim 22, wherein the target server includes a protocol driver of a communication protocol used for communication with the simulation target.

24. (New) A simulation system according to claim 16, further comprising:

a plurality of simulation process modules with corresponding memory modules and interface modules, wherein the simulation process modules represent distinct memory locations for facilitating inter-module communications.

25. (New) A simulation system according to claim 24, wherein the computer-implemented simulation is performed by executing a control system simulation model, and wherein the control system simulation model includes a plurality of sub-models

executed on the corresponding plurality of simulation process modules.

26. (New) A simulation system according to claim 24, wherein at least some of the simulation process modules are dynamically reconfigurable by communication via the distinct memory locations.

27. (New) A host unit for a simulation system for computer-implemented simulation and verification of a control system under development, the simulation system having a host-target architecture, comprising:

a simulation host, wherein the simulation host is operatively connected to a simulation target, and wherein an operating system of the simulation target representing at least a part of the control system is reconfigured by the simulation host via a first application programming interface associated with the operating system of the simulation target.

28. (New) A computer-implemented method for simulating and verifying a control system under development, comprising:

providing a simulation host operatively connected to a simulation target; and

reconfiguring an operating system of the simulation target representing at least a part of the control system by the simulation host via a first application programming interface associated with the operating system of the simulation target.

29. (New) A computer-readable storage medium for storing a computer program that performs, when executed on a computer, a method for simulating and verifying a control system under development, the method comprising:

providing a simulation host operatively connected to a simulation target; and

reconfiguring an operating system of the simulation target representing at least a part of the control system by the simulation host via a first application programming interface associated with the operating system of the simulation target.